Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at http://about.jstor.org/participate-jstor/individuals/early-journal-content.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

ZOOLOGY

Cave-inhabiting Spiders.—Naturalists are paying much attention to cave animals, and the modification of their organs due to their life either in twilight or total darkness. In some the eyes are entirely wanting, while the appendages are variously modified to remedy, as it were, the loss of eyesight. M. Simon of Paris has lately published in the "Annales of the Entomological Society of France," an interesting memoir on certain new spiders and allied forms inhabiting either caves or subterranean abodes in the soil of southern Europe. Some of these arachnids live simply in porous soil, but at great depths, and probably in small galleries. Such species he calls *hypogeal* (*hypogés*) and they belong to the same genera as the cave-inhabiting arachnids, and often the species are so nearly allied that it would seem as if the same species might live both in caves and under the soil, and he thinks certain troglodyte arachnids may live also in porous soil. Several cave-inhabiting arachnids want eyes, such are *Anthrobia*, *Hadiles* and *Stalita*, but he thinks this is a character of minor importance, since it is owing to external conditions slowly produced after a series of generations. Thus M. Thorell has described a *Stalita Schiödtii*, which taken at the entrance of a cave, living in twilight, has rudimentary eyes, while the other species of the same genus living in total darkness has none. All the light-shunning arachnids, both troglodyte and hypogeal, have several features in common which show at once their kind of life. Their skin is thin, colorless, without the fine hairs usually clothing the body of other arachnids, but furnished here and there with long stiff hairs, which doubtless increase their sensitiveness. Their limbs are slenderer and longer than in their congeners living in the light, as has been noticed by American observers. Of this *Stalita* and *Blothrus* are striking examples, as these two arachnids belong to two groups represented respectively by *Dysdera* and *Obisium*, in which the limbs are short and stubby. These long appendages, adds M. Simon, thus modified, are perfectly adapted to a life in the dark; the slender, long feet, garnished with stiff hairs, are organs of a delicate sense of touch, which make up for the absence of eyes. The large fingers (cheliceres) are organs of distant prehension, which enable the species of the genus *Cyphophthalmus* (remotely allied to the harvestmen) to detect at a distance prey, which they are unable to pursue, while the nearest allied external form is a species of Trogulus in which the appendages of the head are so short, that a slight advance of the front suffices to cover them. Here we see specific and generic characters induced by differences in the conditions of life, that are patent to the most casual observer. Hence the most telling facts for the theory that the different forms of life are induced by changes in life and the environment of the plant or animal, are afforded by cave animals. Our country abounds in such cases, and it is hoped that naturalists will explore them thoroughly, as many novelties may be expected.

DIGESTION IN INSECTS. — M. Plateau finds that when the salivary glands of insects are not diverted from their primitive function to become silk or poison glands, they secrete a neutral or alkaline liquid, possessing at least as regards one pair, the property characteristic of the saliva of vertebrate animals of rapidly transforming starch matters into soluble and assimilable glycose. The change is effected in a posterior dilatation of the œsophagus. At this place results in the carnivorous insects a transformation of albuminous matters into soluble substances like peptone, and in vegetable-feeding species an abundant production of sugar out of the starchy matter eaten. When digestion has taken place in the œsophagus it is submitted to an energetic pressure in the gizzard or proventriculus which is armed with teeth. It thus seems that this is not an apparatus for crushing the food, but for expressing the liquid from the food triturated by the jaws. In the stomach, or middle intestine, as Plateau calls it, the food is again submitted to the action of an alkaline or neutral liquid secreted by local glands, present in the Orthoptera, or by a great number of small glandular cæca as in many beetles, or by a simple lining of epithelial cells. This fluid has no analogy with the gastric fluid of vertebrate animals. Its function differs according to the group to which the insect belongs. In the carnivorous beetles it makes an emulsion of the greasy matters; in the Hydrophilid beetles it continues the conversion of starch into glycose, begun in the œsophagus. In the caterpillars of the butterflies and moths it determines a production of glycose and makes an emulsion of greasy matters, and in the grasshoppers no sugar is formed in the intestine, as this material is produced and absorbed in the œsophagus (*jabot*). The intestine proper is only a fœcal reservoir. The urinary or Malpighian tubes sometimes secrete calculi. No bile has been found in the secretions of these tubes. A point of great importance is touched upon by the author, namely: the passage of the chyle from the stomach to the blood. It is well known that there are in Articulates no lacteals as in Vertebrates to effect this process. Plateau states that the products of digestion pass through the walls of the digestive canal by an osmotic action and directly mingle with the blood.

HORNY CREST ON THE MANDIBLE OF THE FEMALE WHITE PELICAN AS WELL AS THE MALE.—In all the standard works on the Birds of North America, it is stated that the horny crest or "button" on the upper mandible of the white pelican (*Pelecanus erythrorhynchus*) is exclusively a male appendage. I dissected, April 20th, 1875, an *adult female* of this species whose ovaries contained eggs in all stages of development. This bird was in full plumage, having the feathers of the head and breast conspicuously elongated and also having a *full-sized horny "button" on the upper mandible.*—F. H. SNOW, *Lawrence*, *Kansas*.

THE WESTERN NONPAREIL IN MICHIGAN.—On the 15th day of May last, Dr. H. A. Atkins of Locke, Ingham Co., Mich., shot and sent me a fine specimen, male, of *Cyanospiza versicolor*, which I have mounted and have now in my collection. Baird, Brewer, and Ridgway's "North American Birds" contains the following note on this species: "This beautiful species has only doubtful claims to a place in our fauna. It is a Mexican species and may occasionally cross into our territory. It was met with at Boquillo, in the Mexican state of New Leon by Lieutenant Couch. It was procured at Guatemala by Dr. Van Patten and by Salvin, and is given by Bonaparte as from Peru. It is also found at Cape St. Lucas, where it is not rare, and where it breeds."

It was shot in the vicinity of some Indigo birds, *C. cyanea*, on the first day of their appearance in this locality.—J. M. B. SILL, *Detroit*, *Mich.*

MICROSCOPY.

A NEW WARM STAGE FOR THE MICROSCOPE.—Prof. E. A. Schafer of University College, London, finding the warm stages already